Math 150 Syllabus

Course title and number  MATH 150 Functions, Trigonometry, and Linear Systems
Term  Fall 2015
Class times  
  - Sections 501-506: MWF 10:20 – 11:10am BLOC 169 (with lab elsewhere on either Tues or Thurs)
  - Sections 507-512: MWF 11:30am – 12:20pm BLOC 169 (with lab elsewhere on either Tues or Thurs)

INSTRUCTOR INFORMATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Sherry Scarborough, Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone number</td>
<td>Department of Mathematics: 845-3261</td>
</tr>
<tr>
<td>e-mail address</td>
<td><a href="mailto:sherry.scarborough@math.tamu.edu">sherry.scarborough@math.tamu.edu</a></td>
</tr>
<tr>
<td>Office</td>
<td>209 Blocker</td>
</tr>
<tr>
<td>Office hours</td>
<td>Mondays 2:30 – 4:30pm, Wednesdays 2:30 – 4:30pm</td>
</tr>
<tr>
<td>Help Sessions</td>
<td><a href="http://www.math.tamu.edu/courses/helpsessions.html">http://www.math.tamu.edu/courses/helpsessions.html</a></td>
</tr>
<tr>
<td>Week in Review</td>
<td><a href="http://www.math.tamu.edu/courses/weekinreview.html">http://www.math.tamu.edu/courses/weekinreview.html</a></td>
</tr>
</tbody>
</table>

Emails: In all correspondence, please include your name, your course number, and your section number in the subject line. Please regularly check your TAMU email daily.

Web Site:  http://www.math.tamu.edu/~Sherry.Scarborough/

Calculator Policy: No calculators are allowed on quizzes or exams. In-class calculator demonstrations will be done with a TI-83/84. It is recommended that you do as much of your online homework without the use of a calculator as you can.

Course Description: Functions, Trigonometry and Linear Systems. Credit 4. Graphs, functions, college algebra and trigonometry, linear systems and vectors.

LEARNING OUTCOMES

This course is focused on quantitative literacy in mathematics found in both business and everyday life. Upon successful completion of this course, students will be able to:

- Perform operations (adding, subtracting, multiplying, dividing) on real numbers, complex numbers, functions, exponents, radicals and vectors
- Graph relations, functions, and vectors
- Solve an equation, a system of equations, and inequalities
- Identify characteristics of a particular function
- Comprehend and solve an application problem (time-to-do work, distance = rate \times \text{ time}, mixtures)
- Understand the importance of domain and be able to find the domain
- Apply exponential functions and logarithmic functions
- Understand and apply basic trigonometry
TEXTBOOK AND/OR RESOURCE MATERIAL

- **Online Textbook**: *PreCalculus* (WebAlg) - 1e by David Manuel, Michael Stecher, and Patti Wells, which will be accessed via WebAssign, your online homework system.

- **WebAssign**: All online homework will be based in the online system WebAssign. You are required to have a WebAssign account.
  - Everything you will need to know about creating an account and logging in is available here: [http://www.math.tamu.edu/courses/eHomework/](http://www.math.tamu.edu/courses/eHomework/). Notice the important links on this web site: WebAssign Login Page, Student Help Request Form (this is where you go if you are having any trouble with WebAssign), Student Information Page and FAQ. Now go to the Student Information Page and read the Math 150 link and ALL the links under Student Help Links.
  - A WebAssign account has an access fee of $48.95 and you will need to “purchase access online” during the first two weeks of school. After that, you risk being locked out of the system and missing important assignments.
  - There will be no makeup homework assignments, since at the end of the semester when final grades are calculated your 2 lowest homework grades are dropped.

- **Learning Catalytics (LC)**: You are required to have a Learning Catalytics account and a web-enabled device. If you are enrolled in *Overcoming Math Misconceptions: PreCalculus Bootcamp* or have a current Pearson’s MyMathLab account then you already have access to Learning Catalytics. Otherwise you will need to purchase an account at [https://learningcatalytics.com/](https://learningcatalytics.com/) for $12 per 6 months or $20 per 12 months. LC will be regularly used in the classroom and counts as part of your participation grade, as well as in the Week-In-Reviews.

- **Classroom Supplies**: Portable web-enabled device (smart phone, tablet, laptop), TAMU Student ID

- **Class Notes**: Class notes are found in Howdy → eCampus → Math 150

- **Lab**: Attendance in your lab section is required, and you must attend the lab section in which you are enrolled. Lab sessions are led by a teaching assistant (TA) and meet once a week, every week, including the first week, depending upon your section number. You will be meeting in small sections to ask math questions of the TA, take quizzes, and take individual exams. You will be assigned to a group during the second week’s lab.

### EXAM SCHEDULE

<table>
<thead>
<tr>
<th>ODD SECTION NUMBERS</th>
<th>EVEN SECTION NUMBERS</th>
<th>SECTIONS COVERED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam I September 22 and 23</td>
<td>Exam I September 23 and 24</td>
<td>1A – 2B</td>
</tr>
<tr>
<td>Exam II October 20 and 21</td>
<td>Exam II October 21 and 22</td>
<td>3A – 5A</td>
</tr>
<tr>
<td>Exam III November 17 and 18</td>
<td>Exam III November 18 and 19</td>
<td>5B – 8D</td>
</tr>
</tbody>
</table>

**Comprehensive Final Exam Schedule**

- Sections 501-506: Tuesday December 15 from 8 – 10am  BLOC 169
- Sections 507-512: Wednesday December 16 from 10:30am – 12:30pm  BLOC 169

### EXAM DETAILS

You will need to bring to your exams your Texas A&M student ID, a #2 pencil and an eraser. You will also need a standard Aggie Scantron form for your lab exams and for your comprehensive final exam. For your 3 regular exams, you will be taking part of your exam (multiple-choice) in lab and part of your exam (workout) in lecture. The comprehensive final exam will be multiple choice and taken in the lecture room. No calculators, cameras or recording devices allowed.
ATTENDANCE AND MAKE-UP POLICIES

- **Excused absences:** Attendance is mandatory and may affect your grade. For excused absences refer to Student Rule 7 at [http://student-rules.tamu.edu/rule07](http://student-rules.tamu.edu/rule07). Excuses for absences during an exam must be substantiated by appropriate documentation. Falsification of documentation is a violation of the Honor Code. *Please note that all make-ups must go through your instructor (NOT your TA), though you are welcome to copy in your TA.*

  - For excused absences refer to [Student Rule 7](http://student-rules.tamu.edu/rule07). Excuses for absences during an exam must be substantiated by appropriate documentation. Falsification of documentation is a violation of the Honor Code. *Please note that all make-ups must go through your instructor (NOT your TA), though you are welcome to copy in your TA.*

  - To be excused you must notify Prof. Sherry by email prior to date of absence if such notification is feasible. For injury or illness too severe or contagious to attend class, you must provide confirmation of a visit to a health care professional affirming date and time of visit. The Texas A&M University Explanatory Statement for Absence from Class Form will NOT be accepted.

- **Scheduled Make-Up Exams:** If you have a University approved absence for missing an exam, you will be expected to make up your exam in the designated room according to the schedule found on [http://www.math.tamu.edu/courses/makeupexams.html](http://www.math.tamu.edu/courses/makeupexams.html), starting with the *earliest* possible option for each exam, after being given approval by me. *Please email me no later than next morning following the missed exam date so I can set up your makeup exam.* Your TAMU student ID is required for admittance to the makeup exam and you must show up within the first 15 minutes to be given an exam. Only if you have a University approved absence for the day of the exam AND the makeup day will you be allowed to use a later makeup option.

- **Late Policy:** No late work will be accepted and no extensions on online homework problem sets will be granted.

QUizzes

Quizzes may be given in lecture or in lab, and may or may not be announced ahead of time. Individual quizzes and group quiz worksheets may be in class or out of class. Most quizzes, in the form of worksheets will be done in assigned groups. *There will be no makeup quizzes, since at the end of the semester when final grades are calculated your 2 lowest quiz grades are dropped.*

- Your first individual quiz “Quiz 0 Scavenger Hunt” is found at [http://www.math.tamu.edu/~scarboro/150fall2015quiz0.pdf](http://www.math.tamu.edu/~scarboro/150fall2015quiz0.pdf). Print out the quiz and follow its directions; it is due in your lab the second week of school.

- **Note Card Assignment Quiz:** Your “getting-to-know-you” note card assignment is due no later than the third week *in lab* (Tuesday September 15th or Thursday September 17th depending upon your section number). You need to have a picture of yourself that is about 2 inches by 3 inches that you will attach to a colored 4-inch by 6-inch index card, which I will provide.

  One side of notecard:
  
  - 5pts Colored note card (blue for sections 501 – 506; green for sections 507 – 512)
  - 10pts Picture of self (stapled or taped to card; NO paperclips)
  - 10pts Name
  - 5pts Math 150-5xx (appropriate section number)
  - 5pts Fall 2015
  - 5pts Phone
  - 10pts Email
  - 10pts Group’s Name (you will find out your group’s name in lab during the 2nd week of school)
  - 10pts Career plans
  - 10pts Hobbies/Interests
  - 10pts Something interesting or unusual; or something you would like me to know

  Other side of notecard:
  
  - 10pts names, phones, and emails of 4 other classmates from your Math 150 lecture class. Please also record your classmates’ names, emails and phone numbers on the first page of your class notes so you will have this information readily available!
GROUP WORK (IN LAB)

In lab you will usually work on group quizzes, known as group worksheets. You will be assigned to a group the second week of school. As you enter your lab classroom during the second week of school, check the lab classroom door for your group assignment. Find your other group members and sit together with them on non-exam days for the rest of the semester. Your group will decide upon your group name. Treat your group as your new place of work. Treat your group members with respect and come to lab prepared with the knowledge required to contribute to your group. If you do not contribute to your group, you can be ‘fired’ (disassociated) from your company (group) after being given notice. See Disassociation Form on http://www.math.tamu.edu/~sherry.scarborough/150topics.html. Group work means that you need to work together as a team to answer all of the questions in a manner that each of your group members understands how to do each problem. It does NOT mean that person A does problem 1, person B does problem 2, and person C does problem 3 such that each person writes the his/her answer down on the graded worksheet without the others having knowledge of how the problem was worked. It is important that each of you understand how to do each of the problems on the worksheets. Please carefully read the instructions on the worksheets so that the present group members get proper credit for that worksheet.

GRADING POLICIES

- Grading Scale

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Exams I, II, III</td>
<td>45% (15% each)</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Participation</td>
<td>5% (mainly Learning Catalytics)</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
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<table>
<thead>
<tr>
<th>Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 - 100%</td>
<td>A</td>
</tr>
<tr>
<td>80 - &lt; 90%</td>
<td>B</td>
</tr>
<tr>
<td>70 - &lt;80%</td>
<td>C</td>
</tr>
<tr>
<td>60 - &lt;70%</td>
<td>D</td>
</tr>
<tr>
<td>&lt; 60%</td>
<td>F</td>
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</table>

- Grade Confidentiality and Disputes: Due to confidentiality, grades will not be discussed via phone or email, only in person. Once you leave class with any graded paper you accept its grade, unless there is a totaling error. All grade disputes must be dealt with at the time you receive them. If the grade was not totaled correctly, you have one week from when the paper was first returned to the class to get the correction made.

AMERICANS WITH DISABILITIES ACT (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu.
### COURSE TOPICS (Tentative weekly schedule)

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC</th>
<th>REQUIRED READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, real numbers, exponents, radicals, polynomials</td>
<td>Sections 1A – 1C</td>
</tr>
<tr>
<td>2</td>
<td>Polynomials, rational expressions, complex numbers, solving equations</td>
<td>Sections 1C – 2A</td>
</tr>
<tr>
<td>3</td>
<td>Solving equations, solving inequalities</td>
<td>Sections 2A – 2B</td>
</tr>
<tr>
<td>4</td>
<td>Review, EXAM 1 (1A – 2B), Rectangular coordinate system</td>
<td>Section: 3A</td>
</tr>
<tr>
<td>5</td>
<td>Graphs of equations, linear equations and inequalities in two variables, functions</td>
<td>Sections 3A – 4A</td>
</tr>
<tr>
<td>6</td>
<td>Graphs of functions, transformations of functions, extreme function values, combinations of functions</td>
<td>Sections 4B – 4E</td>
</tr>
<tr>
<td>7</td>
<td>Combinations of functions, inverse functions, polynomial functions</td>
<td>Sections 4E – 5A</td>
</tr>
<tr>
<td>8</td>
<td>Review, EXAM 2 (3A – 5A), Rational functions</td>
<td>Section 5B</td>
</tr>
<tr>
<td>9</td>
<td>Rational functions, exponential functions, logarithmic functions</td>
<td>Sections 5B – 5D</td>
</tr>
<tr>
<td>10</td>
<td>Logarithmic functions, exponential and logarithmic equations, applications of exponentials and logarithms, systems of linear and non-linear equations</td>
<td>Sections 5D – 7B</td>
</tr>
<tr>
<td>11</td>
<td>Angles and circles, trigonometric functions and their graphs, trigonometric identities</td>
<td>Sections 8A – 8D</td>
</tr>
<tr>
<td>12</td>
<td>Review, EXAM 3 (5B – 8D), Inverse sine functions, inverse trigonometric functions</td>
<td>Sections: 8E – 8F</td>
</tr>
<tr>
<td>13</td>
<td>Law of sines and cosines, solving trigonometric equation</td>
<td>Sections 8G – 8H</td>
</tr>
<tr>
<td>14/15</td>
<td>Solving trigonometric equations, vectors, scalar multiplication, vector addition, vector length, dot product, Review for Final Exam</td>
<td>Sections 8H – 9E</td>
</tr>
</tbody>
</table>

### ACADEMIC INTEGRITY: For additional information please visit: http://aggiehonor.tamu.edu

"An Aggie does not lie, cheat, or steal, or tolerate those who do.”

- **Copyright:** All exams, printed handouts, class notes, assignments, online homework problems, quizzes, worksheets, Learning Catalytic problems, and web-materials are protected by U.S. Copyright Laws. No multiple copies can be made without my written permission. No exams, quizzes, or assignments may be shared with anyone outside of this class. Class notes, online material, online homework problems, exams, quizzes, worksheets, handouts, Learning Catalytic problems or subsets thereof may NOT be posted on Facebook, Twitter, Yahoo!Answers, YouTube, blogs, wikis, forums, videos, podcasts, or any other social media.

- **Aggie Honor Code Violations (cheating):** All Aggie Honor Code and copyright violations will be reported. Violations include copying someone else’s work, acquiring answers from an unauthorized source, allowing someone to copy your work, start the exam before the start time is called or continue writing on an exam, Scantron, or quiz after time is called, violating copyright laws, having someone else do your assignments, posting class material on any social media, etc. Common sanctions include getting a zero for the assignment, getting an F for the course, not being allowed to drop the course, getting a star by your grade on your transcript indicating academic dishonesty, not graduating with honors, getting expelled, dismissed, or suspended from the university, and/or completing an Honor Council Academic Integrity Development Program course, etc. You are authorized to use a pencil, eraser, TAMU Scantron (where applicable), and your own TAMU student ID; use of anything else is a violation of the Aggie Honor Code. You may fill out your exam cover and your personal information on the Scantron form before the exam starts; you may not look at any of the exam problems before the exam officially starts. It is academic dishonesty to have any electronic devices including cell phones, on your person during exams.
Classroom Policy: This is a large class which makes it important for us to be considerate and to follow procedures to help things proceed smoothly. Please do your part!

- Bring your Math 150 class notes to class. The notes are found in Howdy → eCampus → Math 150. It is expected that you have skinned the notes ahead of our class time so that we can focus on working the math problems.
- Please be courteous and respectful. During class I will stay focused on teaching you mathematics, so please stay focused on learning the mathematics being taught. This means you should arrive to class on time, you should stay awake throughout class, you should not be reading a newspaper or working with materials from another course, you should refrain from discussion not related to class, and you should not leave class early (unless there is an emergency or you have talked to me before class). If I feel you are being disruptive or disrespectful during class, you may be asked to leave the room.
- Since I appreciate having an active class, I encourage you to ask questions, to ‘pause’ me when I get too excited and go too fast, and to ‘rewind’ me when I need to go over a step or problem again. I really appreciate those who ask questions in class, and volunteer answers (right or wrong!) in class. The only dumb questions are the ones you do not ask. Even if you cannot figure out how to ask the question, just tell me to run it by you again. It is my job to be the translator -- to figure out what you are trying to ask, so the more information you give me, the better I can figure out what to say. One of my guidelines in life is to learn from my mistakes. We can learn a lot from wrong answers, so please blurt out answers. I can say and enhance your learning so much more from offered comments and answers, than I can to silence. I also appreciate when you can help your neighbor by pointing out a needed thought in the notes. However, please be courteous and respectful to your classmates and to me by not randomly chatting during class time so I will not need to use the virtual ‘mute’ button!
- Sometimes when I am asked a question, I must have this really funny face (some have said mad or stern face); something like :-]. This expression means you have asked a really good question, I am trying to figure out how best to answer it, or I am trying to figure out the logistics for what is being asked. I am just concentrating. I am not mad, nor do I think you are stupid --- it would upset me greatly for you to think that I thought that! I have learned to tell my students to not misread my expression. I really care about you and work really hard to best answer your questions. :-)
- You are special and so is everyone else. Your grades will be calculated the same as everyone else’s. After you turn in your final exam, there is nothing more you can do for your grade. If you are concerned about losing your scholarship, getting kicked out of school, or not getting in the major you want, you need to seek help the whole semester, not just come to me the last week or two of school. I do care about you and about your learning. This is college; it is up to you to seek help. If you are having trouble with math, please come to my office hours, attend the Week-In-Reviews, attend help sessions, etc. If you are having personal issues or other problems, please let me know so I can direct you to those who can help or contact [http://scs.tamu.edu/](http://scs.tamu.edu/).
- Our teaching assistants (TA) often come from around the world as this is an internationally-known university. At first it may take some time getting comfortable with your TA's accent. You can be a big help by asking him/her to repeat what he/she said, to ask him/her to speak louder, or ask him/her to write it on the board. On the other hand, he/she can be a big help to you since he/she knows his/her math!

Pep Talk: Some of you will not perform as well as you had hoped on an exam or an assignment. You may naturally question whether you belong in college or question your abilities. You may feel like you are alone and isolated. Maybe you are the first in your family to go to college and are in totally new territory. Believe in yourself! There is a saying, “When the going gets tough, the tough get going.” Just keep working hard; just keep trying and get help where you need it. Life is full of successes and failures. Winston Churchill said, “Success is not final, failure is not fatal: it is the courage to continue that counts.”

Personal Requests: You are always welcome to come to my office hours; you do not need an appointment. I encourage you to come, ask questions, as often as you would like. Students who come to office hours can get personal attention and help. If you smoke, please ‘air out’ before visiting. As a courtesy to all, please turn your cell phones and pagers off during office hours and all classes (except for the times you are actively using your cell phone to answer Learning Catalytic problems). Thanks!

Please Note: While it is critical that you attain the correct answer to a question, you must show correctly, precisely, and accurately its solution (all the steps, labels, explanations, equal signs, models, etc.) in an orderly, clear, concise manner. Where appropriate, circle your final answer. You are responsible for your own learning.
Helpful links
- Academic Calendar http://registrar.tamu.edu/General/Calendar.aspx
- Final Exam Schedule http://registrar.tamu.edu/General/FinalSchedule.aspx
- On-line Catalog http://catalog.tamu.edu/
- Religious Observances http://dof.tamu.edu/content/religious-observance

Help:

- Bookmark my web page so you will know where to find all important information 
  http://www.math.tamu.edu/~Sherry.Scarborough/
- Bookmark my Math 150 web page 
  http://www.math.tamu.edu/~sherry.scarborough/150topics.html
- Read my class notes (found on elearning.tamu.edu) and skim the online book before class
- Attend all classes, including all labs
- Bring your class notes, pencil, web-enabled device, and TAMU student ID to every class
- Do all your graded online homework
- Ask questions
- Do all your text homework
- Attend Prof. Sherry’s office hours
- Attend help sessions http://www.math.tamu.edu/courses/helpsessions.html. Help Sessions are a place to see homework-type problems worked and a place to get online homework help. Help Sessions usually start the second week of school.
- Attend Math 150 Fall 2015 Week-In-Review (WIR):  http://www.math.tamu.edu/~scarboro/150fall2015wir.html. Weekly reviews will be given by Math 150 instructor Prof. Sherry Scarborough using Learning Catalytics. This includes an exam review on the week of your exam. WIR is not held the week immediately after an exam week.
- Work the WIR problems from the Fall of 2013: http://www.math.tamu.edu/~scarboro/150fall2015wir.html
- Do and review the Learning Catalytics’ sessions
- Ask me for help with homework problems during office hours
- Keep up with the course
- Address your math misconceptions and weaknesses by immersing yourself in *Overcoming Math Misconceptions: PreCalculus Bootcamp* ($95.70): http://www.math.tamu.edu/~sherry.scarborough/bootcamp2015.html
- Form study groups and get together regularly
- Get a personal tutor (a list is available outside Blocker 227)
- Contact the Learning Skills Center (845-4427)
- Contact http://tutor.tamu.edu/
- Contact Services for Students with Disabilities, if needed, at 845-1637
- Read *How is College Different from High School?* by TAMU Student Counseling Service at http://www.math.tamu.edu/~scarboro/howiscollegedifferentfromhighschool.pdf
- Read *Self Help-Math Study Skills* by TAMU Student Counseling Service at http://scs.tamu.edu/?q=node/92
- See TAMU Student Counseling Service *Self Help Guides* at http://scs.tamu.edu/?q=node/88#academic
- Register for TAMU Student Counseling Services at http://scs.tamu.edu/
- Read the PreCalc Chronicles found at http://www.math.tamu.edu/~sherry.scarborough/150topics.html#ebook